ABSTRACT

AIM :

The aim of this study was to evaluate the marginal adaptation of White Pro Root MTA and Biodentine as furcal perforation repair materials in mandibular first molars using Micro Computed Tomography.

OBJECTIVES:

1. To compare the marginal adaptation of White ProRoot MTA and Biodentine in perforated mandibular first molars quantitatively.
2. To compare the gap of White ProRoot MTA and Biodentine in perforated mandibular first molars qualitatively.

METHODOLOGY:

Forty human mandibular first molars based on the inclusion and exclusion criteria were selected. Soft tissue debris were cleaned mechanically and rinsed under water. The samples were perforated in the middle of the pulpal floor using endo access bur and irrigated using sodium hypochlorite 3% to remove the debris and final irrigation performed with saline. The teeth were divided into two groups of 20 teeth each.

Group 1 - Mandibular first molars repaired with White ProRoot MTA and

Group 2 - Mandibular first molars repaired with Biodentine.

Each sample was examined under Micro-CT for marginal adaptation. The images were evaluated qualitatively using scores given by Selen Kuçukkaya Eren et al (2017) and quantitatively by ImageJ software.

RESULTS:

Gap volume was present in both the groups. Biodentine showed lesser gap at the repair material and dentin/cementum interface than White ProRoot MTA but it had no statistical significance. Hence, White ProRoot MTA, and Biodentine seals the perforation site effectively both qualitatively and quantitatively.

CONCLUSION:

The present study concludes that lately introduced Biodentine is comparable with that of White ProRoot MTA in repairing furcal perforation in mandibular first molars and can be a promising alternative to MTA in clinical situations.

KEY WORDS: BIODENTINE, FURCAL PERFORATION, MARGINAL ADAPTATION, MICRO-COMPUTED TOMOGRAPHY PERFORATION REPAIR, WHITE PROROOT MTA